

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Receipt #5

In re application of:

Thomas H. Turpen, Stephen J. Reinl,  
Laurence K. Grill

Group Art Unit: 1649

Application Serial No.: 09/057,016

Examiner: Fox, D.

Filed: April 7, 1998

Attorney's Docket No. 00801.0087.US01

For: **PRODUCTION OF PEPTIDES IN  
PLANTS AS VIRAL COAT PROTEIN  
FUSIONS****REQUEST FOR CORRECT OFFICIAL FILING RECEIPT**Box Application Processing Division's Customer Division Branch  
Assistant Commissioner for Patents  
Washington, D.C. 20231**RECEIVED**  
**SEP 02 1999**  
**GROUP 1800**

Sir:

On April 28, 1998, Applicants filed a Request for Correct Official Filing Receipt to reflect the correct continuing data as claimed by Applicant. Recently, however, Applicants have become aware of further corrections that need to be made to the continuing data. Enclosed is a copy of the Official Filing Receipt marked in red to show all of the corrections that should be made to the CONTINUING DATA AS CLAIMED BY APPLICANT. The corrections are as follows:

THIS APPLN IS A CON OF	08/324,003 10/14/94	
WHICH IS A CIP OF	08/176,414 12/29/93	ALLOWED
THIS APPLN IS ALSO A CIP OF	08/184,237 01/19/94	PAT 5,589,367
WHICH IS A CIP OF	07/997,733 12/30/92	ABN
WHICH IS A CON OF	07/923,692 07/31/92	PAT 5,316,931
WHICH IS A CIP OF	07/739,143 08/01/91	ABN
AND A CIP OF	07/737,899 07/26/91	ABN
(WHICH IS A CON OF	07/363,138 06/08/89	ABN
WHICH IS A CON OF	07/219,279 07/15/88	ABN)
AND A CIP OF	07/641,617 01/16/91	ABN
(WHICH IS A CON OF	07/347,637 05/05/89	ABN)
AND A CIP OF	07/600,244 10/22/90	ABN
WHICH IS A CON OF	07/310,881 02/17/89	ABN
WHICH IS A CIP OF	07/160,771 02/26/88	ABN
AND A CIP OF	07/160,766 02/26/88	ABN

This information is found on the first page of the Application and the first two pages of the Preliminary Amendment (copies included).

Issuance of a corrected Official Filing Receipt is respectfully requested.

[X] This Request for Corrected Official Filing Receipt is being filed to correct a Patent Office error. No fee is required.

Application Serial No.: 09/057,016  
Attorney's Docket No. 00801.0087.US01

[ ] The \$25.00 fee required under 37 C.F.R. §1.19(h) to correct an Official Filing Receipt due to applicant error: [ ] is enclosed; [ ] is authorized to be charged to Deposit Account No. 08-3038. This paper is submitted in duplicate.

Respectfully submitted,

Date: August 26, 1998

**HOWREY & SIMON**

Box No. 34

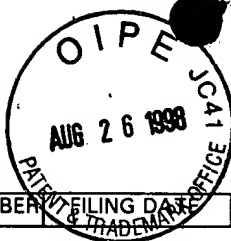
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Albert P. Halluin (Reg. No. 25, 227)

## FILING RECEIPT

UNITED STATES DEPARTMENT OF COMMERCE  
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Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
09/057,016	04/07/98	1632	\$436.00	801.87US01-	8	4	4

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APR 27 1998

APR 22 1998

HOWREY &amp; SIMON (M.P.)

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Application Processing Division's Customer Correction Branch within 10 days of receipt. Please provide a copy of the Filing Receipt with the changes noted thereon.

## Applicant(s)

THOMAS H. TURPEN, VACAVILLE, CA; STEPHEN J. REINL,  
SACRAMENTO, CA; LAURENCE K. GRILL, VACAVILLE, CA.

## CONTINUING DATA AS CLAIMED BY APPLICANT-

THIS APPLN IS A CON OF 08/324,003 10/14/94  
WHICH IS A CIP OF 08/184,237 01/19/94 PAT 5,589,367  
WHICH IS A CIP OF 07/997,733 12/30/92  
WHICH IS A CON OF 07/923,692 07/31/92 PAT 5,316,931  
WHICH IS A CIP OF 07/600,244 10/22/90 ABN

FOREIGN FILING LICENSE GRANTED 04/18/98

\* SMALL ENTITY \*

## TITLE

PRODUCTION OF PEPTIDES IN PLANTS AS VIRAL COAT PROTEIN FUSIONS

PRELIMINARY CLASS: 435

008010087US01  
DOCKETEDStatus Check  
10/7/99

THIS APPLN IS A CON OF 08/324,003 10/14/94 1  
WHICH IS A CIP OF 08/176,414 12/29/93 2 ALLOWED

THIS APPLN IS ALSO A CIP OF 08/184,237 01/19/94 3 PAT 5,589,367  
WHICH IS A CIP OF 07/997,733 12/30/92 4 ABN  
WHICH IS A CON OF 07/923,692 07/31/92 5 PAT 5,316,931  
WHICH IS A CIP OF 07/739,143 08/01/91 6 ABN  
AND A CIP OF 07/737,899 07/26/91 7 ABN  
(WHICH IS A CON OF 07/363,138 06/08/89 8 ABN  
WHICH IS A CON OF 07/219,279 07/15/88 9 ABN)  
AND A CIP OF 07/641,617 01/16/91 10 ABN  
(WHICH IS A CON OF 07/347,637 05/05/89 11 ABN)  
AND A CIP OF 07/600,244 10/22/90 12 ABN  
WHICH IS A CON OF 07/310,881 02/17/89 13 ABN  
WHICH IS A CIP OF 07/160,771 02/26/88 14 ABN  
AND A CIP OF 07/160,766 02/26/88 15 ABN

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PRODUCTION OF PEPTIDES IN PLANTS  
AS VIRAL COAT PROTEIN FUSIONS

Thomas H. Turpen,  
Stephen Reinl,  
Laurence K. Grill

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Field of the Invention

The present invention relates to the field of genetically engineered peptide production in plants, more specifically,  
10 the invention relates to the use of tobamovirus vectors to express fusion proteins.

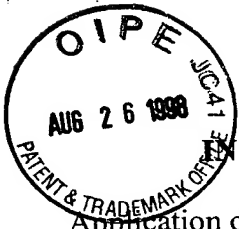
CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is a continuation-in-part of  
15 application 08/176,414, filed on December 29, 1993 which is a continuation-in-part of application Serial No. 07/997,733, filed December 30, 1992.

BACKGROUND OF THE INVENTION

20 Peptides are a diverse class of molecules having a variety of important chemical and biological properties. Some examples include; hormones, cytokines, immunoregulators, peptide-based enzyme inhibitors, vaccine antigens, adhesions, receptor binding domains, enzyme inhibitors and the like. The  
25 cost of chemical synthesis limits the potential applications of synthetic peptides for many useful purposes such as large scale therapeutic drug or vaccine synthesis. There is a need for inexpensive and rapid synthesis of milligram and larger quantities of naturally-occurring polypeptides. Towards this  
30 goal many animal and bacterial viruses have been successfully used as peptide carriers.

The safe and inexpensive culture of plants provides an improved alternative host for the cost-effective production of such peptides. During the last decade, considerable progress  
35 has been made in expressing foreign genes in plants. Foreign proteins are now routinely produced in many plant species for modification of the plant or for production of proteins for



Express Mail No. EM555262225US  
PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Turpen *et al.*

Group Art Unit: not yet assigned

Serial No.: not yet assigned

Examiner: not yet assigned

Filed: April 7, 1998

Attorney Docket No.:  
00801.087.US01

For: **PRODUCTION OF PEPTIDES  
IN PLANTS AS VIRAL COAT  
PROTEIN FUSIONS**

**PRELIMINARY AMENDMENT  
UNDER 37 C.F.R. § 1.607 COPYING CLAIMS  
FROM PATENT FOR PURPOSES OF INTERFERENCE**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Applicants present the following claims and request that an interference be declared between these claims and the claims of U.S. Patent No. 5,618,699.

**AMENDMENT**

**IN THE SPECIFICATION:**

Please amend the specification as follows:

On page 1, line 14, after "The present application is", please insert --a continuation of application 08/324,003, filed October 14, 1994, which is--.

On page 1, line 17, after "December 30, 1992." please insert:

--The present application is a continuation-in-part of Application No. 08/184,237, filed January 19, 1994, which is a continuation-in-part of Application No. 07/997,733, filed December 30, 1992, now abandoned, which is a continuation of Application No. 07/923,692, filed July 31, 1992, now Patent No. 5,316,931, which is a continuation-in-part of Applications No. 07/600,244, filed October 22, 1990, now abandoned, No. 07/641,617, filed January 16, 1991, now abandoned, Application No. 07/737,899, filed July 26, 1991, now abandoned, and Application No. 07/739,143, filed August 1, 1991, now abandoned.

Application No. 07/600,244 is a continuation of Application No. 07/310,881, filed February

17, 1989, now abandoned, which is a continuation-in-part of Applications No. 07/160,766 and No. 07/160,771, both filed on February 26, 1988 and now abandoned. Application No. 07/641,617 is a continuation of Application No. 07/347,637, filed May 5, 1989, now abandoned. Application No. 07/737,899 is a continuation of Application No. 07/363,138, filed June 8, 1989, now abandoned, which is a continuation-in-part of Application No. 07/219,279, filed July 15, 1988, now abandoned. Application No. 07/739,143 is a continuation-in-part of Applications No. 07/600,244, filed October 22, 1990, now abandoned, No. 07/641,617, filed January 16, 1991, now abandoned, and No. 07/737,899, filed July 26, 1991, now abandoned. Benefit is claimed under 35 U.S.C. § 120 with respect to Applications No. 07/923,692, filed July 31, 1992, No. 07/739,143 filed August 1, 1991, No. 07/310,881, filed February 17, 1989, and No. 07/160,766, filed February 26, 1988.--

On page 3, line 10, please replace "plan" with --plant--.

On page 7, line 9, please replace "o" with --of--.

On page 8, line 4, please replace "fusion s" with --fusions--.

On page 10, line 35, please replace "disassembled" with --disassembled--.

On page 11, line 5, please replace "infections" with --infectious--.

On page 11, line 8, please replace "having" with --have--.

On page 11, line 13, please insert --have-- after "may".

#### IN THE CLAIMS:

Please cancel claims 1-13.

Please add the following claims:

--14. A plant virus vector comprising a viral assembly origin and a foreign protein gene linked downstream of a coat protein gene of a Tobamovirus via a nucleotide sequence of a Tobamovirus which causes readthrough, such that upon expression of the vector in a plant, the coat protein and a fusion protein of the coat protein and the foreign protein are systemically produced in the plant.--